

Iwona Sikorska, Marta Paluch

Jagiellonian University, Cracow, Poland

Institute of Applied Psychology

BRAVE CHILDREN: HOW TO DEVELOP RESILIENCE IN CHILDHOOD

Abstract

The article sets out to describe the pilot programme BRAVE CHILDREN concerning ways to develop resilience in middle childhood. The project has adopted an understanding of resilience according to the following model: high protective factors levels in children, including such factors as initiative, self-control and attachment; low risk factors levels (behavioural concerns) and high social maturity levels in children and their internal locus of control.

The programme included 13 meetings conducted over the course of 6 months, each meeting taking approx. 60 minutes. The classes were designed for preschool children aged 5 years to 5 years and 11 months. Their focus was to develop such competencies as self-awareness and the awareness of others, self-agency, self-control, social skills, problem-solving skills, coping with stress and negative emotions. The programme was evaluated by measuring an increase in children's resilience reflected in their individual resources (evaluated before and after the programme).

The project involved an educational intervention group composed of 62 children (from three different preschools) and a control group composed of 59 children (from three other preschools). Observational data were obtained from both parents of all children and six teachers of preschool groups.

The results obtained as part of the programme's evaluation indicate a significant change and improvement in resilience indicators in the educational intervention group. The increase in competencies was observed with regard to initiative, self-control and total protective factors. A decrease in behavioural concerns was also observed in the intervention group. Neither the intervention group nor the control group demonstrated any significant change with regard to social development.

Key words: resilience, childhood, life skills, health promotion

Dzielne dzieci – jak rozwijać odporność psychiczną w okresie dzieciństwa Streszczenie

Artykuł przedstawia pilotaż programu *Dzielne Dzieci*, dotyczącego rozwijania odporności psychicznej w okresie dzieciństwa. Przyjęto rozumienie odporności jako wysoki poziom czynników ochronnych w postaci inicjatywy, samokontroli i przywiązania oraz niski poziom czynników ryzyka w postaci zachowań niepokojących. Uwzględniono też, jako należący do odporności, poziom dojrzałości społecznej oraz umiejscowienie poczucia kontroli. Interwencja edukacyjna objęła 62 dzieci (z trzech różnych przedszkoli) oraz grupę kontrolną 59 dzieci (z trzech innych przedszkoli). Od rodziców i nauczycieli zostały zebrane skale obserwacyjne na temat zachowania dzieci w okresie ostatnich czterech tygodni.

Otrzymane wyniki wykazały istotny wzrost czynników związanych z odpornością psychiczną w grupie dzieci, w której przeprowadzono interwencję. Zannotowano wzrost poziomu takich kompetencji, jak inicjatywa, samokontrola oraz całościowy indeks czynników ochronnych. Wyniki potwierdziły również zakładany spadek liczby zachowań niepokojących w tej grupie. W zakresie rozwoju umiejętności społecznych nie stwierdzono istotnych zmian ani wśród dzieci biorących udział w programie, ani wśród tych, które nie brały w nim udziału.

Słowa kluczowe: odporność psychiczna, dzieciństwo, umiejętności życiowe, promocja zdrowia

Introduction

The article adheres to the third line of research on resilience which focuses on promoting resilience and assisted resilience by fostering individual, family and environmental resources (two other lines of research identify individual resilience resources and study resilience as a process respectively). The concepts of promoting resilience and assisted resilience have become part and parcel of the health psychology lexicon. Researchers have also created separate categories to define the concept of resilience and apply it in further research. The Second World Congress on Resilience held in May 2014 in Timișoara, Romania, devoted three sessions and a total of thirty papers to the concepts of promoting resilience and assisted resilience (Sikorska, 2014). This illustrates how much interest is devoted to this particular research area. The article also draws upon the fourth line of research on resilience in that it cites the results of the studies on brain physiology and behaviours characteristic of resilient persons.

The classical understanding of the concept of resilience is concerned with the phenomenon of development despite unfavourable environmental circumstances, such as the chronic failure to meet children's needs, pathological family environment, traumatic experiences and cognitive and emotional deprivation experienced by young people (Garmezy, 1993; Kolar, 2011; Richardson, 2002; Rutter, 2006; Masten, 2001; Werner, 2000). The results of the studies carried out over the last

fifty years make it possible to create a list of factors which positively correlate with mental health, successful adaptation styles and development despite difficult life experiences. The characteristic traits, behaviours and situations thus identified may help young people to overcome obstacles, cope with difficulties and complete developmental tasks in often highly unfavourable circumstances (Kolar, 2011; Masten, 2001; Masten, Obradovic, 2006). Psychologists can also use the resilient child profile to develop programmes which foster significant resilience competencies in children. It is possible to take measures that stimulate individual resilience resources, also known as life skills, already in preschool children. The conditions which prove conducive to this include prevention projects and programmes organised in preschools (Fröhlich-Gildhoff, Kiellman, Lecaplain, Prata Gomes, Wojciechowski, 2013; Kumpfer, Johnson, 2007; Korzeniowska, Pyżalski, Plichta, Puchalski, Goszczyńska, Knol-Michałowska, Petrykowska, 2013; Sikorska, Miklewska, 2010).

Resilience researchers generally agree that resilience is a widespread phenomenon; (Luthar, Żelazo, 2003; Masten, 2001; Richardson, 2002) and that resilience-promoting factors emerge over the course of typical children's development. The conclusions from the study indicate that it is advisable, first of all, to secure healthy developmental circumstances for children, and second, to stimulate children's important personal competencies early on in their development.

Thus, the article sets out to present arguments derived from health psychology and neurophysiology to demonstrate that it is advisable to carry out programmes which foster children's resilience and their coping skills.

No Health without Mental Health

In his description of the seven models of positive mental health, George Vaillant offers a summary of the hitherto proposed definitions of the concept (Vaillant, 2012). His synthetic and perspectivist approach to mental health, which he defines in positive terms and not as a mere lack of disease, identifies a number of important areas that have been later explored in a number of studies. Vaillant's analysis will be briefly summarised here, since his propositions concern competencies, factors and characteristics which attract a lot of interest and have been stimulated by the programmes that develop resilience as personal traits.

The first proposition defines positive mental health as human functioning above the norm, which is best expressed by 80 points and above on the Global Assessment of Functioning Scale. Thus, positive mental health is ascribed to persons who function perfectly or almost perfectly in all life areas. They show no pathological symptoms, have many interests and develop them accordingly, are socially active and happy with their lives (Jahoda, 1958; Grinker, Grinker, Timberlake, 1962).

Another understanding of positive mental health puts focus on individual strengths. This approach examines cognitive optimism for its positive impact on individual behaviour and individual brain functioning. Its adherents argue that internal, general and permanent attributions when it comes to success and external, temporary and situational attributions when it comes to failure are conducive to positive mental health (Peterson, Seligman, 2004).

The third proposition treats positive mental health and maturity as one. In order to achieve the latter, individuals have to complete Erikson's developmental tasks and attain: identity, intimacy, generativity and ego integrity. Additionally, Vaillant mentions "career consolidation" for which the following criteria are necessary: contentment, compensation, competence, and commitment. The last factor propounded by the author includes becoming the Keeper of the Meaning, namely transferring tradition to younger generations. By completing these tasks at every stage of their development, individuals demonstrate their maturity regardless of gender, education, race and culture (Erikson, 2004; Kohlberg, 1984).

The fourth concept of positive mental health focuses on positive emotions in individuals (Fredrikson, 2001; Lyubomirsky, King, Diener, 2005). Eight positive emotions are considered to include in this model. They are: love, hope, joy, forgiveness, compassion, faith, awe and gratitude (Vaillant, 2012). More importantly, each of these relies on the social context and relationships with other people. Mental states inherent in these emotions are studied by neuroimaging tools, which in turn help to identify their corresponding specific brain structures, especially the limbic region and mirror neurons.

The fifth proposition to define positive mental health focuses on individuals with high social and emotional intelligence levels. Individuals can significantly improve their social functioning if they know how to recognise, name and control both their own emotions and those of other people. High social competencies in turn allow individuals to adequately recognise both their own emotions and those of others and respond accordingly, e.g. by providing support when others need it or by asking for and accepting support when they themselves are in need (Goleman, 1994).

Vaillant also mentions researchers who propose a different angle on positive mental health as subjective well-being. Although researchers usually investigate objective criteria to provide objective measurement tools, individual thoughts and feelings also prove important in the study of well-being. Martin Seligman and Ed Diener (Diener, 2011; Seligman, 2002) emphasise that the main function of subjective well-being is the ability to take care of oneself, which proves to be the exact opposite of learned helplessness. People high in subjective well-being are regarded living significantly longer.

The seventh area to explore when building the positive mental health model is resilience. Accordingly, the author propounds a definition whereby resilience is the ability to go through hardship, cope with difficulties and develop healthily despite adversity (Vaillant, 2012).

Vaillant's proposition has been mentioned here for two reasons. First of all, the majority of the areas covered in his seven models are statistically significant for mental health and show significant correlations with one another (Study of Adult Development, Harvard, 1988–2012, as cited in: Vaillant, 2012). Secondly, these models cover areas which overlap with competencies developed in the programme presented in the article (emotional intelligence, social skills and resilience). These competencies, being vital for mental well-being, are worth fostering from the early stages in children's development.

The Brain Learns from the Environment

Resilience research focuses on the sources of resilience in genetics and brain neurobiology by both exploring the individual traits of resilient persons and by investigating the underlying causes of these traits. Eric Kandel, an American neurobiologist and Nobel Prize laureate, demonstrates that while human beings organise their life experiences from the early stages in their development, their earliest experiences remain vital for their personal development, cognitive faculties and the way in which they experience emotions. This provides evidence to observations offered by psychoanalysts and psychodynamic therapists who argue that early childhood experiences play a pivotal role in personality formation. Kandel's Manifesto propounds that external factors can modify gene expression through learning. Changes in gene expression modify synapses, which in turn has an effect on personality formation (Kandel, 1998).

Brain researcher Ehsan Pishva presents a similar neurobiology-inspired understanding of resilience. He discusses a number of animal models and the existing research outcomes which demonstrate that "genes learn from the environment," which means that external stimulation may activate or modify particular genes responsible for resilience. In his analysis of the study on the DNMT3A gene carried out in Maastricht, the Netherlands, Pishva demonstrates that this particular gene plays a considerable role in readaptation processes in animals (Pishva, 2014).

The neuroscience approach points to the role of specific substances which stimulate resilience. Persons who are considered resilient find it easier to regain their stress hormone equilibrium. Over the last few years, several specific substances which help regain such equilibrium have been isolated. The substances in question include dehydroepiandrosterone (DHEA), which attenuates cortisol levels, and neuropeptide Y (NPY), which reduces anxiety levels by counteracting the effect of the corticotropin-releasing hormone (Feder, Charney, Collins, 2011).

Persons who are considered resilient are also high in social skills. These skills develop in persons capable of empathy as a result of appropriate emotional responses or reactions in the social context. The mirror neurons system

allows individuals to feel other people's emotions: the former observe the latter performing certain tasks which they experience as their own. The ventromedial prefrontal cortex, which is also known as the limbic cortex vmPFC, is also involved in the process. It becomes activated when individuals think about the mental states of their own and those of other people. Current research indicates that mirror neurons and the limbic system perform better in those children who are higher in empathy and interpersonal competencies (Feder, Charney, Collins, 2011).

Research on attachment, which proves to be a very important resilience-promoting factor, reveals that failure to experience close attachment in early childhood has a damaging effect on personality development. Such failure precludes both gene activation and the production of new proteins which reinforce synapses and strengthen capacity for learning. Failure to experience safe attachment and exposure to massive stressors may in turn hamper brain development (Ahnert, 2010; Braun, Helmeke, Bock, 2009). This may have an adverse effect on the development of the left hemisphere, especially the left side of the hippocampus; the integration of the left and the right hemispheres and the growth of the corpus callosum. Chronic stress and its neurochemical components lead to an increase in disruptions in brain functioning, which in turn is reflected in EEG abnormalities (Gil, 2006). In primates, separation from parents and siblings may inactivate the left dorsolateral prefrontal cortex and selected parts of the limbic system. The phenomenon is interpreted as a shift in the above regions of the brain whereby they switch to the "economy mode" as a result of separation-induced stress. Since brain development is triggered by environmental stimuli which in turn activate synaptic neurotransmission processes in the neural system, prolonged low brain activation levels (due to stress experienced by a child) lead to long-term changes in metabolic brain processes. The above outcomes were obtained not only by studies involving animals, but also those conducted in children's homes (O'Connor, Rutter, 2000; as cited in: Braun, Helmeke, Bock, 2009).

All the above studies reveal a close relationship between environmental influences and psychological development, and as such they allow for two important conclusions. Firstly, they demonstrate the importance of early childhood experiences for the formation of a normal neurological base necessary for further development. Secondly, they show that adults should organise children's experiences in a conscious way to avoid the adverse effect from various deprivations or the environment.

Resilient Children's Competencies and Characteristics

The characteristic traits of resilient children usually include: high cognitive process functioning levels, capacity for learning, verbal capacities and the ability to plan.

Their internal resources also comprise: sociability as a temperamental variable and high motivation levels with regard to life as well as education plans and goals. Resilient persons also use successful self-control mechanisms, namely the ability to cope with negative emotions and to control impulses. Resilient children are described as cheerful and optimistic, with a positive image of themselves, including high self-esteem, confidence and self-agency levels. They are also high in social skills, such as the ability to communicate, connect with other people and resolve conflicts (Garmezy, Rutter, 1983; Masten, 2001; Werner, 2000). Research has shown that resilient children are more androgynous, which means that boys find it easier to express their emotions and they are more outgoing and sociable than their less resilient colleagues while girls are better organised, more confident and show more interest in exploring the surrounding world (Constantine et al., 1999; Fergus, Zimmerman, 2005; Garmezy, Rutter, 1983; Masten, 2001; Masten, Obradovic, 2006; Werner, 2000).

The resilient child profile propounded by Edith Grotberg includes the following components: external resources (I am surrounded by people who trust me and give me unconditional love, they set me the limits and set an example, they help, support and strengthen me), internal resources (I am happy, loved and respected, responsible and filled with optimism) and competencies (I know how to share emotions, control my behaviour, solve problems and seek help from other people) (Froehlich-Gildhof, 2007; Grotberg, 2000; Pilecka, 2014).

The resilient child profile demonstrated in resilience research seems to be in line with the concept of “life skills” defined by the WHO in 2004. The concept in question is divided into five groups: (1) self-awareness and empathy, (2) coping with stress and emotions, (3) communication and interpersonal skills, (4) development of critical and creative thinking skills, (5) problem solving and decision-making skills.

The outcomes of the studies involving children who have coped with adversity, overcome difficulties and achieved developmental success laid the foundation for a number of prevention programmes (Constantine et al., 1999; Froehlich-Gildhof, 2007; Le Buffe, Naglieri, 2002). Educational measures to stimulate resilience in children were undertaken on the conviction that by learning how to cope with difficulties small children will also develop important coping skills in the future. These skills will in turn help them cope with problems and crises, such as failures or conflicts inherent in their lives.

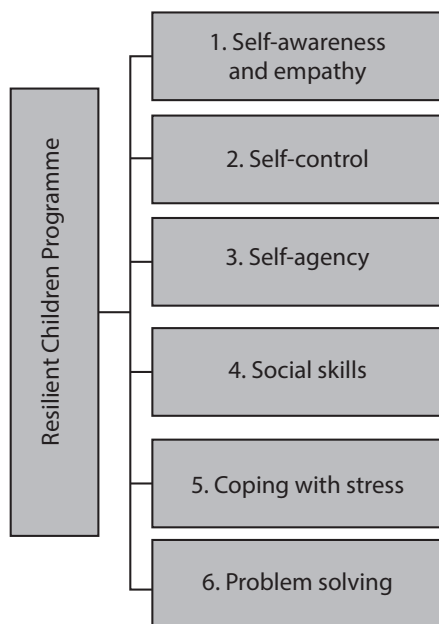
Method

The pilot programme Brave Children! was completed over the course of six months in the academic year 2013/2014. The programme involved weekly meetings with preschool children aged five years to five years and eleven months. The programme was conducted in three public preschools in Krakow by a young

psychologist supported by preschool teachers responsible for each group. In the first meeting, children were introduced to the leaders of the programme: two hand puppets, Fabiola the Frog and Maurycy the Cat, who would attend the meetings and engage in conversation with children. The programme offered games and motor activities, arts-related classes, dialogues and discussions. The programme was based on the Training Programme for Resilience Development by Klaus Fröhlich-Gildhoff, Tamara Dörner and Maike Rönna (PRiK – *Trainingprogramm zur Prävention und Resilienzförderung in Kindertageseinrichtungen*, 2007). Polish adaptation of the program was connected with addition of Polish children's songs and rhymes.

The meetings focused on six main areas (Figure 1):

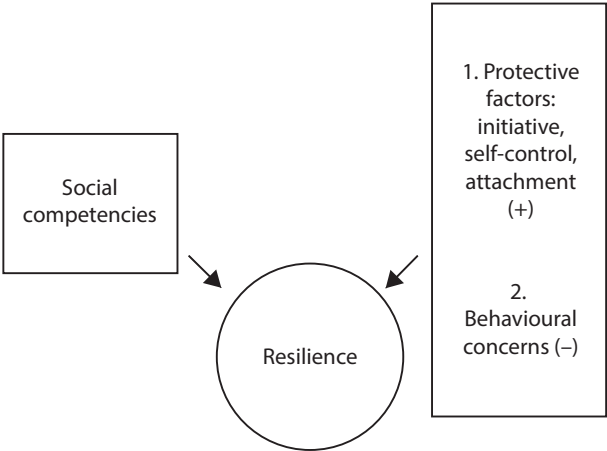
Figure 1. Competencies stimulated in the programme (after Fröhlich-Gildhoff, Dörner Rönna, 2007)



Source: Authors' research.

The evaluation of the programme was carried out after its completion. The evaluation was conducted by comparing the intervention group with the control group (children from preschools where the programme was not conducted). The evaluation of the programme was carried out to verify children's resilience levels (Figure 2) defined as protective factors, including initiative, self-control and attachment; the lack of risk factors or low risk factor levels as well as social maturity, which are subject to change following the educational intervention.

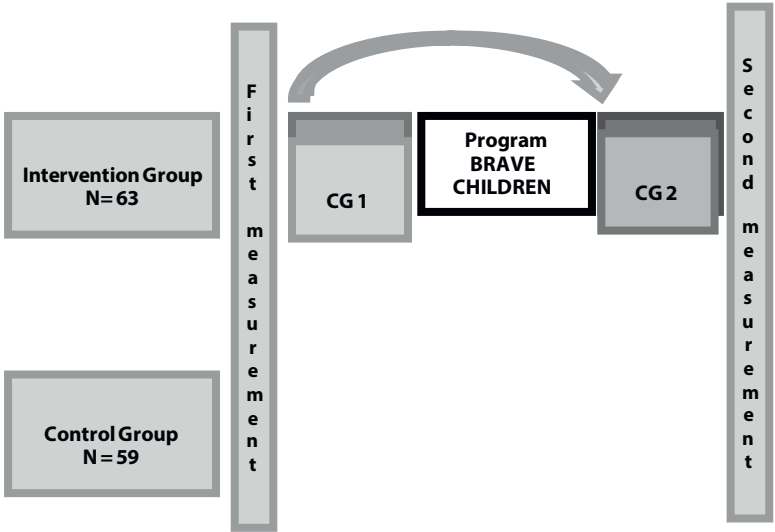
Figure 2. Measured variables: resilience and its components



Source: Authors' research.

The dependent variable (resilience levels) was measured twice in both the intervention group and in the control group.

Figure 3. Evaluation design



Source: Authors' research.

Participants

The research programme involved 122 children. The intervention group comprised 63 children (27 girls and 36 boys) and the control group 59 children (27 girls and 32 boys).

Observational data were obtained from six preschool teachers and both parents of all 122 children (244 people). However, a smaller sample was analysed due to a shortage of data.

Measurement Tools

The study used measurement tools based on observational data. The behaviour of children was rated by adults with whom they were in permanent contact, such as parents and preschool teachers.

- Children's resilience scale: The Devereux Early Childhood Assessment (DECA) Paul A. LeBuffe, & Jack A. Naglieri (2002) for children aged from 2 to 5 years.

The test is composed of 37 questions assigned to 2 major scales: (1) *Protective Factors*, which is divided into 4 more detailed sub-scales: *Initiative*: the ability to think on one's own and take initiative to meet one's own needs, *Self-Control*: the ability to experience and express feelings and the degree to which a child can adjust to social expectations in this respect; *Attachment*: the ability to create a permanent, powerful and deep relationship with significant adults; *Total Protective Factors*: a total protective factors index; (2) *Behavioural Concerns*: difficult and worrying behaviours in a child. The rater chooses the answer to identify the frequency of behaviours observed in a child on the following scale: never-rarely-occasionally-frequently-very frequently (score from 0 to 4). The programme used the Polish version of the scale translated by Iwona Sikorska. The internal reliability coefficients for the Polish version of DECA Scale were high. In Total Protective Factors Scale alpha for Mother Rater was .88, for Father Rater .80 and for Teacher Rater .90.

- The Preschool Children Observational Scale by Maria Przetacznikowa (1977).

The tool is used by teachers to assess preschool children's behaviours for cognitive, social and emotional development. The scale used in the study partially explores children's social skills, especially the ability to cooperate with others. It also uses descriptions of seven behaviours with five proposed answers to choose from (score from 1 to 5). Example: Children's ability to connect:

1. Finds it very difficult to connect, especially with strangers.
2. Some difficulties in connecting with other people, they feel embarrassed for a while.
3. Shows different behaviours at different times.
4. Quite easy to connect, initial shyness quickly disappears.
5. Very easy to connect, they often connect spontaneously and with almost every person.

The tool is based on raw data and is used in preschools mainly for diagnostic purposes; the comparison of the means in both groups also allows for group analysis. The study has adopted the following measurement model: if children score high in the test, they are high in social maturity.

- Personal questionnaire.

The questionnaire focused on information relevant to children's resilience, such as their health, the time they spent with the parents, difficult experiences in their lives (loss in the family, disease, hospital treatment or accident), longer periods of separation from the parents. Additional questions focused on their contacts with other significant adults (e.g. grandparents) or their extracurricular activities. The following demographic data in the family were also verified: the age and education of the parents and the number of children in the family.

Procedure

Resilience and its components were measured twice in the intervention group and the control group: in autumn 2013 and in spring 2014. Parents completed the DECA Scale and the Personal Questionnaire while teachers filled in the DECA Scale and the Preschool Children Observational Scale (social development).

Outcomes

The study examined the following controlled variables:

Age of the parents: The mean age of the parents was approx. 36 years both in the intervention group and the control group. Education: Parents from each group showed no statistically significant differences in their education: 76% of the mothers and 65% of the fathers in the intervention group and 75% of the mothers and 68% of the fathers in the control group were secondary school or university graduates respectively. Children's health: Parents in both groups did not differ significantly in their ratings of their children's health, which they evaluated mostly as very good or good (95%). Other measured variables such as longer periods of separation from the parents or difficult life experiences failed to reveal any differences between the two groups compared in the study. Children in their majority did not experience any longer periods (at least half a year) of separation from their parents. Nearly 80% of the children had no traumatic experiences in their lives, but they mentioned difficult moments such as short periods of hospital treatment or loss in the family (grandparents), accidents or loss of their favourite pets. Siblings: approx. 20% of the children in the intervention group and 10% in the control group are only children, 50% of the children in both groups have one brother or sister, only 4.8% of the children in the intervention group and 11.7% of the children in the control group have two siblings. Time spent with the parents:

Fathers spent significantly less time with their children than mothers in both groups compared in the study. Approx. 40% of the mothers in the intervention group and 30% of the mothers in the control group spent around 6 hours a day with their child whereas only 14.3% and 15% of the fathers in the intervention group and the control group respectively devoted as much time to their children. This could have a significant effect on the knowledge each of the parents has on their children and on the way they rate their competencies. Extracurricular activities: The vast majority of children (approx. 70% in the intervention group and 60% in the control group) took part in extracurricular activities such as sports or arts classes.

Three different sources were used in the analysis: mothers, fathers and preschool teachers. The data obtained in the study were examined to answer the following questions:

1. Are resilience levels defined as protective factors, including initiative, self-control and attachment; the lack of risk factors or low risk factor levels as well as social maturity, are likely to change following the Brave Children! programme, that is, as a result of the educational intervention?
2. Do children's ratings provided by mothers, fathers and preschool teachers differ, and if so, in which areas?

The outcomes obtained in the study will be presented in the following order:

- changes in protective factors (initiative, self-control, attachment) and risk factors (behavioural concerns) according to the parents and the teachers from the intervention group and the control group respectively;
- changes in social development according to the teachers from the intervention group and the control group respectively;
- differences in rating provided by the mother, the father and the teacher.

Resilience: protective and risk factors

Intervention Group

Table 1. Changes in protective and risk factors in the intervention group

Factors	Mother			Father			Teacher		
	M1	M2	p	M1	M2	p	M1	M2	p
Initiative	28.8	30.2	**	27.5	28.8	n.i.	26.3	27.7	*
Self-control	20.8	22.0	***	20.4	21.2	***	20.9	21.7	*
Attachment	26.8	26.9	n.i.	25.5	26.4	n.i.	21.1	21.9	***
Protective factors	76.3	79.1	***	73.5	76.4	*	68.3	71.4	***
Behavioural concerns	13.3	11.9	**	12.6	12.5	n.i.	11.7	11.2	n.i.

M1: mean in Measurement 1; M2: mean in Measurement 2; *($p < 0.05$); **($p < 0.01$); ***($p < 0.001$)

Source: Authors' research.

1. Ratings by mothers (N = 53)

The statistical analysis used nonparametric tests due to inconsistencies between regular distribution and the distribution of the results obtained in the study. Wilcoxon's matched pairs test demonstrated statistically significant differences between the first and the second measurement in the ratings provided by mothers in the intervention group. Changes in children's behaviour were revealed with regard to initiative ($T = 339$, $Z = 2.72$, $p < 0.01$), self-control ($T = 194$, $Z = 3.9$, $p < 0.001$) and a total protective factors index ($T = 261$, $Z = 3.49$, $p < 0.001$). All these variables showed higher values in the second measurement, which demonstrated an increase in initiative, self-control and a larger number of protective factors. Mothers also noticed a significant change in their children's behavioural concerns ($T = 307$, $Z = 3.038$, $p < 0.01$), which in turn showed a tendency to subside. Mothers did not notice any significant changes in their children's attachment styles.

2. Ratings by fathers (N = 39)

Wilcoxon's matched pairs test demonstrated statistically significant differences between the first and the second measurement with regard to self-control ($T = 82$, $Z = 3.40$, $p < 0.001$) and a total protective factors index ($T = 201$, $Z = 2.45$, $p < 0.01$). The above variables showed higher values in the second measurement, which demonstrated a growth in self-control and total protective factors. Fathers did not notice any significant differences in children's behavioural concerns, initiative and attachment styles.

3. Ratings by teachers (N = 63)

Changes in children's behaviour were revealed with regard to initiative ($T = 712$, $Z = 2.35$, $p < 0.01$), self-control ($T = 675$, $Z = 2.27$, $p < 0.01$) and a total protective factors index ($T = 543$, $Z = 3.18$, $p < 0.001$). All these variables showed higher values in the second measurement, which demonstrated an increase in initiative, self-control and a larger number of protective factors. Teachers did not notice any significant differences in children's behavioural concerns and attachment styles.

Control Group

The comparison between the first and the second measurement fails to show any statistically significant changes with regard to variables in the control group as rated by mothers and fathers. The only statistically significant difference between the two groups was revealed by teachers with regard to behavioural concerns ($T = 506.0$; $Z = 2.036$, $p < 0.05$). Teachers did not notice any decrease in behavioural concerns in preschool children.

Social Development

All six teachers from six preschools failed to reveal any statistically significant differences with regard to children’s social development. The comparison between the first and the second measurement both in the intervention group and in the control group gave no ground to identify any statistically significant changes in children’s social development.

Differences in Ratings Provided by Mothers, Fathers and Teachers

All raters pointed out differences in several areas of resilience, including protective factors and risk factors. The outcomes of the first measurement are represented below.

Table 2. Children’s behaviours as rated by mothers, fathers and teachers with respect to particular areas (arithmetic mean)

Rater	Initiative	Self-control	Attachment	Total protective factors	Behavioural concerns
Mother	28.8	20.8	26.8	76.3	13.3
Father	27.5	20.4	25.5	73.5	12.6
Teacher	26.3	20.9	21.1	68.3	11.7
p	*	n.i.	***	***	*

Source: Authors’ research.

Statistically significant differences between the ratings provided by mothers, fathers and teachers were identified by means of the the Kruskal-Wallis one-way analysis of variance by ranks. The comparison of the differences between the groups was carried out by the post hoc multiple comparison test.

Initiative

A statistically significant difference between the ratings provided by mothers, fathers and teachers could be observed with regard to initiative in children ($H(2, N = 303) = 6.4; p < 0.05$). Mothers rated their children’s initiative significantly higher than teachers ($Z = 2.4; p < 0.05$).

Self-Control

No statistically significant difference between the ratings provided by mothers, fathers and teachers could be observed with regard to self-control ($H(2, N = 303) = 2.6; p > 0.05$).

Attachment

Statistically significant difference between the ratings provided by mothers, fathers and teachers could be observed with regard to attachment in children ($H(2, N = 303) = 118.7; p > 0.0001$). Mothers rated their children's attachment significantly higher than teachers ($Z = 10.3, p < 0.0001$). Fathers also rated their children's attachment higher than teachers ($Z = 7.3; p < 0.0001$)

Total Protective Factors

A statistically significant difference between the ratings provided by mothers, fathers and teachers could be observed with regard to total protective factors in children ($H(2, N = 303) = 19.9; p > 0.0001$). Mothers rated their children's total protective factors significantly higher than teachers ($Z = 4.45, p < 0.0001$).

Behavioural Concerns

A statistically significant difference between the ratings provided by mothers, fathers and teachers could be observed with regard to behavioural concerns in children ($H(2, N = 303) = 6.8; p > 0.05$). Mothers rated their children's behavioural concerns significantly higher than teachers ($Z = 2.6, p < 0.05$).

Discussion and Conclusions

The obtained outcomes demonstrated an increase in protective factors in children taking part in the Brave Children! programme. Although the changes were observed by all the adults remaining in close contact with children, the respective ratings provided by mothers, fathers and teachers differed with one another. Mothers observed an improvement in their children's behaviour with regard to initiative, self-control, total protective factors and behavioural concerns (4 areas). Teachers observed an improvement in initiative, self-control and total protective factors (3 areas). Fathers observed an improvement in self-control and total protective factors (2 areas). The differences between the ratings may be explained by (1) the amount of time each adult spent with the child, (2) their powers of observation, (3) the nature of the relationship between the adult and the child resulting from the pedagogic approach adopted by the adult. The analysis of the data from personal questionnaires revealed that the amount of time that fathers spent with their children in the intervention group equals one-third of the time devoted to the children by their mothers. This factor could have a significant effect on how much each parent knows about his or her child and the behaviours they display in a variety of situations. Interestingly enough, fathers noticed an improvement in children's self-control, which can

be explained by their particular interest in norms and social expectations and the idea of self-mastery.

It is not surprising that no statistically significant differences between the first measurement and the second measurement were pointed out by teachers with regard to social development. Neither the intervention group nor the control group demonstrated any significant change in this respect. This can be explained by regularities in development whereby significant changes can be observed after at least a year. Secondly, the observational scale is lacking in accuracy and fails to identify changes that happen to be more subtle.

Out of the three groups it is mothers who rated their children the highest with regard to initiative, attachment and total protective factors. They also observed the largest number of behavioural concerns. Mothers and teachers significantly differed in their ratings of these four factors. Even though mothers and teachers spent a comparable amount of time with children, the fact that teachers had to focus on the entire group made it more difficult for them to concentrate on individual children. Having said that, teachers were more impartial in their ratings and could compare children's responses to social norms and group requirements. Interestingly enough, it was mothers who observed more behavioural concerns than teachers. This can be explained by children's ability to mobilise their resources when they are socially exposed and have to function within the group. This also shows that while children involved in the study enjoyed a privileged position in their homes (the intervention group comprised 20% of only children and 50% of children with one sibling), their parents may have been a little inconsistent as carers or educators. Thus, children probably behaved differently in different environments because they had to meet different sets of requirements from different adults.

Since changes in the measured areas were observed in the intervention group, this would suggest the positive effect of the Brave Children! Programme. Evaluations of the programmes which promote social and emotional competencies in children indicate that children involved in resilience-promoting programmes are more likely to develop adaptive skills. The DECA Programme demonstrates an improvement in preschool children's functioning when they are stimulated by their parents (*For Now and Forever: A Guide for Families on Promoting Social and Emotional Development*) and their peer group (*Classroom Strategies to Promote Children's Social and Emotional Development*). Children significantly improved their developmental results in protective factors (initiative, self-control, attachment) and reduced the number of behavioural concerns (LeBuffe, Naglieri, 2002). The evaluation of the Germany-conducted programme PRiK – *Training-programm zur Prävention und Resilienzförderung in Kindertageseinrichtungen* has in turn shown that children improved their social and emotional competencies, could play quietly for a longer period of time and reduced the number of behavioural concerns (according to teachers). Parents have also observed that children displayed fewer oppositional defiant behaviours. Additionally, more positive

behaviours have been observed, including willingness to share, cooperation, openness, signs of joy and creative behaviours (Froehlich-Gildhof, Dörner, Rönna, 2007). The evaluation of Zippi's Friends, another programme designed for preschool children focused on developing their coping skills, has revealed that children improved their social competencies and used their positive coping mechanisms (Monkeviciene, Mishara, Dufour, 2006). It has also been observed that children gained in empathy, developed their assertiveness and self-control, reduced behavioural concerns, such as short temper and impulsive behaviour, improved their relationships with other children and teachers, which in turn resulted in an overall improvement in the classroom atmosphere (Dufour, Denoncourt, Mishara, 2011; Holen, Waaktaar, Lervåg, Ystgaard, 2012). It is believed that the best way to prepare children for school and to facilitate their learning process is to encourage them to speak about their concerns and anxieties and to read stories that would provoke discussion about change. Zippy's Friends provides tools to make this possible.

Conclusions

1. Resilience-promoting programmes follow the rule which says that if small children have the chance to learn how to cope with adversity, they will be better equipped and have necessary tools to deal with problems and crises in the future.
2. Resilience-promoting programmes also demonstrate that programmes designed to foster children's development can focus on areas other than cognitive development. The activities which stimulate internal resources and develop adaptive mechanisms may also become an essential part of the curriculum.
3. Brave Children's success lies in the fact that children showed a lot of interest in the classes and used the newly acquired methods both in classroom and in everyday situations. They also identified with the characters in the programme and shared their experiences and emotions. This effect proves very important, perhaps even more important than the outcomes provided by quantitative measurements.
4. By way of conclusion, we would like to make a reference to the term "ordinary magic" which Ann Masten coined to describe the phenomenon of resilience in 2001. Children can discover this magic in themselves if we help them discover their inner strength and competencies which they can later develop and improve.

References

- Ahnert, L. (2010). *Wieviel Mutter braucht ein Kind? Bindung-Bildung-Betreuung: öffentlich und privat*. Heidelberg: Spektrum, Akademischer Verlag.
- Antonovsky, A. (1995). *Rozwikłanie tajemnicy zdrowia. Jak radzić sobie ze stresem i nie zachorować*. Warszawa: Fundacja IPN.
- Braun, K., Helmeke, C., Bock, J. (2009). *Bindung und der Einfluss der Eltern-Kind-Interaktion auf die neuronale Entwicklung präfrontaler und limbischer Regionen Tierexperimentelle Befunde*. [In:] K.H. Brisch, Th. Hellbrügge (Eds.), *Wege zu sicheren Bindungen in Familie und Gesellschaft* (52–79). Stuttgart: Klett-Cotta.
- Constantine, N., Benard, B., Diaz, M. (1999). Measuring protective factors and resilience traits in youth: The Healthy Kids Resilience Assessment. *American Psychologist*, 55, 647–654.
- Dufour, S., Denoncourt, J., Mishara, B.L. (2011). Improving Children's Adaptation: New Evidence Regarding the Effectiveness of Zippy's Friends, a School Mental Health Promotion Program. *Advances in School Mental Health Promotion*, 4(3), 18–28.
- Erikson, E. (2004). *Tożsamość a cykl życia*. Poznań: Zys i S-ka.
- Feder, A., Charney, D.S., Collins, K. (2011). *Pathways to resilience. Neurobiology of resilience*. [In:] S.M. Southwick, B.T. Litz, D. Charney, M.J. Friedman (Eds.), *Resilience and Mental Health: Challenges Across the Lifespan* (1–10). Cambridge: Cambridge University Press.
- Feder, A., Nestler, E.J., Charney, D.S. (2009). Psychobiology and Molecular Genetics of Resilience. *Nature Reviews Neuroscience*, 10(6), 446–457.
- Fergus, S., Zimmerman M.A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health* 2005, 26, 399–419.
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218–226.
- Fröhlich-Gildhoff, K., Dörner, T., Rönau, M. (2007). *PriK – Trainingprogramm zur Prävention und Resilienzförderung in Kindertageseinrichtungen*. München: Reinhardt.
- Fröhlich-Gildhoff, K., Kiellman, C., Lecaplain, P., Prata Gomes, M., Wojciechowski, T. (2013). *Violence Prevention and Resilience Promotion in Schools*, Vol. 6. Freiburg: FEL.
- Garmezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry*, 1993, 56, 127–136.
- Garmezy N., Rutter M. (1983). *Stress, Coping, and Development in Children*. New York: McGraw.
- Gil, E. (2006). *Helping Abused and Traumatized Children. Directing and Nondirecting Approaches*. New York, London: The Guilford Press.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Grinker, Sr. RR, Grinker, Jr. RR, Timberlake, J. (1962). A study of mentally healthy young males (homoclitcs). *Archives of General Psychiatry*, 6, 405–453.
- Grotberg, E. (2000). *Zwiększenie odporności psychicznej – wzmacnianie sił duchowych*. Warszawa: Wydawnictwo Akademickie „Żak”.
- Holen, S., Waaktaar, T., Lervåg, A., Ystgaard, M. (2012). The effectiveness of a universal school-based programme on coping and mental health: a randomised, controlled study of Zippy's Friends. *Educational Psychology*, 32(5), 657–667.

- Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books.
- Kandel, E.R. (1998). A New Intellectual Framework for Psychiatry. *American Journal of Psychiatry*, 155, 457–469.
- Klohn, E. (1996). Conceptual Analysis and Measurement of the Constant of Ego-Resiliency. *Journal of Personality and Social Psychology*, 70, 5, 1067–1109.
- Kohlberg, L. (1984). *Essays on moral development: Vol II. The psychology of moral development*. San Francisco: Harper & Row.
- Kolar, K. (2011). Resilience: Revisiting the Concept and its Utility for Social Research. *International Journal of Mental Health and Addiction*, 9 (4), 421–433.
- Koralek, D. (1999). *For now and Forever – a guide for families on promoting social and emotional development*. DECA Program. Villanova: The Devereux Foundation.
- Koralek, D. (1999). *Classroom strategies to promote children's social and emotional development*. DECA Program. Villanova: The Devereux Foundation.
- Korzeniowska, E., Pyżalski, J., Plichta, P., Puchalski, K., Goszczyńska, E., Knol-Michałowska, K., Petrykowska, A. (2013). *Promocja zdrowia psychicznego w placówce edukacyjnej*. Podręcznik opracowany w ramach projektu Mental Health Promotion Hadbooks. Łódź: Instytut Medycyny Pracy.
- Kumpfer, K.L., Johnson, J.L. (2007). Strengthening Family interventions for the Prevention of Substance Abuse in Children of Addicted Parents. *Addictions*, 19(1), 13–25.
- LeBuffe, P., Naglieri, J. (1998). *Devereux Foundation, Early Childhood Initiative*, www.devereux.org (accessed: 20.06.2015).
- Luthar, S.S., Żelazo, L.B. (2003). *Research on Resilience. An integrative view*. [In:] S.S. Luthar (Ed.), *Resilience and Vulnerability* (510–549). Cambridge: University Press.
- Lyubomirsky, S., King, L., Diener, E. (2005). The benefits of frequent positive affect: does happiness lead to success? *Psychological Bulletin*, 131, 803–855.
- Masten, A. (2001). Ordinary Magic. Resilience Process in Development. *American Psychologist*, 56, 3, 227–238.
- Masten, A., Obradović, J. (2006). Competence and Resilience in Development. *Annals of the New York Academy of Sciences*, 1094, 13–27.
- Meyer, T., Greve, W. (2012). Die Entwicklungsbedingungen der Adaptivität. Theoretische Überlegungen und empirische Befunde zu einem Entwicklungsmodell akkomodativer Regulationskompetenz. *Zeitschrift für Gesundheitspsychologie*, 20(1), 27–38.
- Monkevicene, O., Mishara, B.L., Dufour, S. (2006). Effects of the Zippy's Friends Programme on Children's Coping Abilities During the Transition from Kindergarten to Elementary School. *Early Childhood Education Journal*, 34(1), 58–59.
- O'Connor, T.G., Rutter, M., ERA (English and Romanian Adoptees) Study Team (2000). Attachment disorder behaviour following early severe deprivation: Extension and longitudinal follow-up. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 703–712.
- Peterson, C., Seligman, M.E.P. (2004). *Character strengths and virtues*. New York: Oxford University Press.
- Pilecka, W. (2014). *Resilience as a chance of developmental success for a child with chronic illness*. [In:] T.M. Ostrowski, I. Sikorska (Eds.), *Health and resilience* (141–157). Kraków: Jagiellonian University Press.
- Pishva, E. (2014). *Neurobiology of Resilience*. Lecture during Second World Congress on Resilience, Timisoara, Romania, 8–9 May 2014.

- Przetacznikowa, M. (1977). *Psychologia wychowawcza, społeczna i kliniczna*, Warszawa: WSiP.
- Richardson, G.E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology*, 58, 307–321.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals New York Academy of Science*, 1094, 1–12.
- Seligman, M.E.P., Csikszentmihalyi, M. (2000). Positive psychology. *American Psychologist*, 55, 5–14.
- Sikorska, I. (2011). *Bufory stresu*. Kraków: Wydawnictwo Edukacyjne.
- Sikorska, I. (2014). Sprawozdanie z Second World Congress on Resilience. *Psychoterapia*, 3(170), 93–98.
- Sikorska, I., Miklewska, A. (2010). Wspieranie zdrowia psychicznego dziecka. *Wychowanie w Przedszkolu*, 63(5), 8–14.
- Tugade, M.M., Fredrikson, B.L., Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: examining the benefits of positive emotions on coping and health. *Journal of Personality*, 72(6), 1161–1190.
- Vaillant, G.E. (2000). Adaptive mental mechanisms: their role in a positive psychology. *American Psychologist*, 55, 89–98.
- Vaillant, G. (2012). Positive mental health: is there a cross-cultural definition? *World Psychiatry*, 11(2), 93–99, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3363378/> (accessed: 20.06.2015).
- Werner, E.E. (2000). Protective factors and individual resilience. [In:] J.P. Shonkoff, S.J. Meisels (Eds.), *Handbook of Early Childhood Intervention* (115–132). Second edition. Cambridge: Cambridge University Press.